DCS 6000

User Manual

Digital Conference System

AO 6004 Audio Output Unit

List of Contents

Important

Compliancy

The equipment has been tested and found to comply with the limits of the following standards for digital devices:

- EN55103-1 (Emission)
- EN55103-2 (Immunity)
- FCC rules part 15, class A (Emission)

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial or light industrial environment. The equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the user manual it may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Installation precautions

Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place exposed to direct sunlight, excessive dust or humidity, mechanical vibration or shock.

To avoid moisture condensations do not install the unit where the temperature may rise rapidly.

Cleaning

To keep the cabinet in its original condition, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use organic solvents such as thinners or abrasive cleaners since these will damage the cabinet.

Repacking

Save the original shipping cardboard box and packing material; they will become handy if you ever have to ship the unit. For maximum protection, re-pack the unit as originally packed from the factory.

Warranty

The individual units in the DCS 6000 system are minimum covered by 12 months warranty against defects in materials or workmanship.

Description of the DCS 6000 system

Features

The DCS 6000 system has the following main features:

- Fully digital

- Excellent sound quality

- "State of the Art" fully digital integrated interpretation, discussion and voting system offering interpretation, language distribution, conference microphone and voting facilities with attendance check with Chip Card ™.

- New, unique digital DATA and AUDIO bus.

- 39 incoming channels (8 floor channels + 31 interpreted channels) and one Line input.

- 34 distributed channels (3 x floor + 31 interpreted channels)

- The Delegate and Interpreter units are powered and controlled by the CU 6005 Central Unit, which drives up to app. 50 units on 2 chains or by the CU 6010 Central Unit, which drives up to app. 200 units on 4 chains.

- EX 6010 Extension Units or PS 6000 Power Supplies available if more units are required

- A total of 4000 units (delegate and interpreter units) can be connected to the system.

- Using screened CAT5 or CAT5e cabling (FTP or STP) ensuring a very cost effective installation and easy set-up of portable systems

- Firmware in Delegate units, Interpreter Units, Central Units etc. upgradeable through serial PC-connection (RS232 or RS422)

- Can be operated with or without a PC.

- Added functionality and comprehensive features provided by SW 6000 software package running on PC

RS232/RS422 connection on CU 6005/6010 for external operation of the system of a PC or control system such as AMX or Crestron

The SW 6000 is an optional software package, which expands the functionality of the DCS 6000 system. The software runs on standard computer technology (Standard PC with Windows 2000 or XP).

Main features of the SW 6000 are:

- Microphone management

- Mimic panel operation

- Interpretation management

- Voting management

- Message handling

- Agenda handling

- Data stored on SQL data base for easy export/import of data

- Web interface available for easy links to external databases

- Multi language user interfaces

- Supports different User types with different priorities, user interfaces and control possibilities

- Variety of printing facilities such as speaker's log, voting results, delegates list etc.

System components

The CU 6005/6010 Central Units support all available units in the DCS 6000 series:

Central equipment etc.

EX 6010	Extension Unit
PS 6000	Power Supply
AO 6004	Audio Output box
AO 6008	Audio Output box
RP 6004	Repeater for four chains
JB 6002	Junction Box with 2 outputs
JB 6004	Junction Box with 4 outputs

Interpreter equipment

IS 6132P	Interpreter Set
LS 6132P	Interpreter Loudspeaker

Voting equipment

DV 6501F	Voting Unit

Conference equipment and channel selectors

CS 6032FV/H	Channel Selector (flush mounted)
DM 6010P	Conference Unit (portable)
DM 6060P	Conference Unit (portable) with one built-in channel selector
CM/DM 6070P	Conference Unit (portable) with two built-in channel selectors
CM/DM 6090P	Conference Unit (portable) with two built-in channel selectors and XLR microphone connector
CM/DM 6060F	Conference Unit (flush mounted) with one built-in channel selectors
CM/DM 6510F	Conference Unit (flush mounted) with Chip-card and 3 voting buttons
CM/DM 6560F	Conference Unit (flush mounted) with one built-in channel selector, Chip-card and 3 voting buttons
MU 6040C/D	Microphone Unit for use with customised front plate with Loudspeaker, Microphone and Buttons. Available in Delegate (D) and Chairman (C) version
MU 6042D	Dual Microphone Unit for use with FD/FC front plate with Loudspeaker, Microphone and two delegate Buttons
AM 6040	Ambient Noise Microphone

Operating instructions

AO 6004 Audio Output Unit

General description

The AO 6004 Audio Output Unit for the DCS 6000 system enables the user to record the sound from a number of interpreted language channels or floor channel on external devices such as tape- or hard disk recorders by analogue interface.

It can also be used to distribute sound channels to for example infrared distribution or loudspeaker system.

Features

- Decoding of 4 language channels into analogue audio chosen out of the possible 31 digital channels as well as the Floor channel in 3 qualities.

- The 4 decoded channels are available on 4 analogue outputs (XLR connectors).

- A number of AO 6004 can be combined to decode more channels. Up to 20 pieces AO 6004 can be connected and configured in one system to decode more channels.

- Easy to use with preconfigured settings and automatic channel assignment at start-up:

  Output A – channel 0

  Output B – channel 1

  Output C – channel 2

  Output D – channel 3

- User control of the AO 6004 by sending commands from a PC via CU 6005/6010.

- The unit is connected to the bus as any other unit and by controlling it from the CU 6005/6010 it can be placed anywhere in the system.

- The unit can be used as a single unit, installed in a 19'' rack or inserted in a slot in the CU 6005.

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User controls, indications & connections

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Front plate layout

The front plate layout of the AO 6004 Audio Output Unit consists of 4 XLR analogue transformer balanced outputs and 2 DCS-LAN connectors:
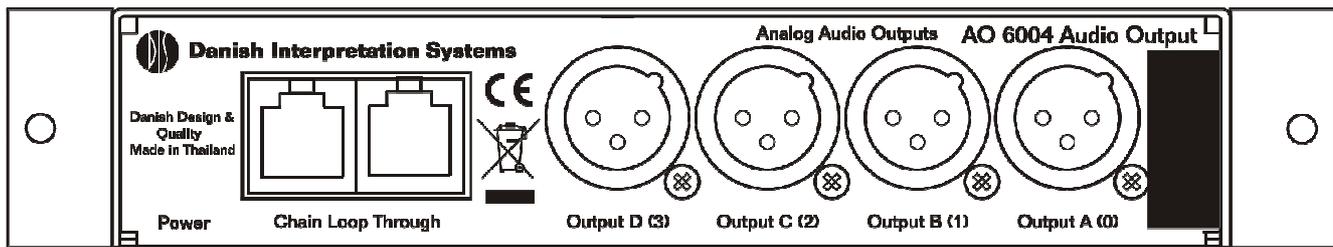
Front plate controls and indicators

The AO 6004 is an easy to use AO unit with pre-configured settings and no user interface in terms of controls, display or indicators.

Front plate connectors

❑ *Audio Output A to D*

On the front are located 4 XLR 3P connectors, each supplying transformer balanced audio signal from each of the 4 channels.

The outputs can be used for tape recording purpose i.e. or for connecting a digital infrared transmitter like DT 6008, DT 6032 or analogue infrared transmitter IT6108 for wireless transmission of the interpreted languages.

❑ *DCS-LAN connector*

Two RJ45 sockets are located at the front of the unit for connecting to the previous unit like the CU 6005/6010 Central Unit or any other unit with a DCS LAN connector and to the next unit like an IS 6132 Interpreter set, CS 6032 Channel Selector, DM/CM 6xxx Conference Unit.

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System settings

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Pre-configured settings

The AO 6004 comes with pre-configured settings and can be used without additional configurations.

The AO 6004 automatically assigns channels to the outputs at start-up. Output A is assigned channel 0 (Floor), Output B is assigned channel 1, Output C is assigned channel 2 and Output D is assigned channel 3.

The output volume for each channel is +3 dB, which is the recommended level for connecting to DT 60xx.

The unit can be re-configured using SW 6000. The settings for a reconfigured unit can be saved in the CU 6005/6010.

SW6000 settings

The SW6000 can be used for changing the assignment of channels to outputs and for setting the volume.

Both the Conference Administration Application (CAA) and the Conference User Application (CUA) can be used to configure the AO units connected. They both have settings for assigning channels to each of the 4 outputs A-D. Each output can be set to

one of the 31 language channels or one of the three Floor channels:

> Floor: automatic gain controlled output

> Floor 1: loudspeaker unregulated audio

> Floor 2: loudspeaker regulated audio

An ambience microphone will only be active on the Floor channel, not on Floor 1 or Floor 2

Values: {Floor 2, Floor 1, Floor, 1,…, 30, 31}

The volume of the outputs can also be set if the default settings are not appropriate.

Values: {Off, -40, -39,…, 14, 15}

Refer to the CAA and CUA User Manuals for more details.

Normal operation

Powering up

Connect the AO unit(s) to the rest of the system via the DCS-LAN connectors and connect the audio outputs to the appropriate units (tape recorders, infrared transmitters, etc.).

Switch on the power on the CU 6005/6010.

During the initialization the AO unit will automatically assign channels to the outputs. The unit is immediately ready to use after start-up unless other channels need to be assigned to the outputs or the channel volume needs to be adjusted. These adjustments can only be done using the SW 6000.

System Setup

General guidelines

Connect the AO 6004 to the various units using Cat 5 FTP or STP cables. Please observe the following guide lines:

- Maximum cable length in one chain is 200 m without repeater. This includes interconnection cables between the units. The max. usable cable length depends on the units connected and length of feeding cables etc.

- Maximum cable length in one chain when using repeaters is 650 m.

If the last unit in one chain is a CS 6032 Channel Selector, this unit has to be terminated with an external termination, as the CS 6032 does not have an internal termination.

Typical schematics

Connect the AO 6004 to the DCS 6000 network using Cat 5 cables. The Analogue Audio output connectors are connected to either tape recorders for recording the interpreted channels or to IT6008 Infrared Transmitter(s) for transmitting the interpreted channels wireless.
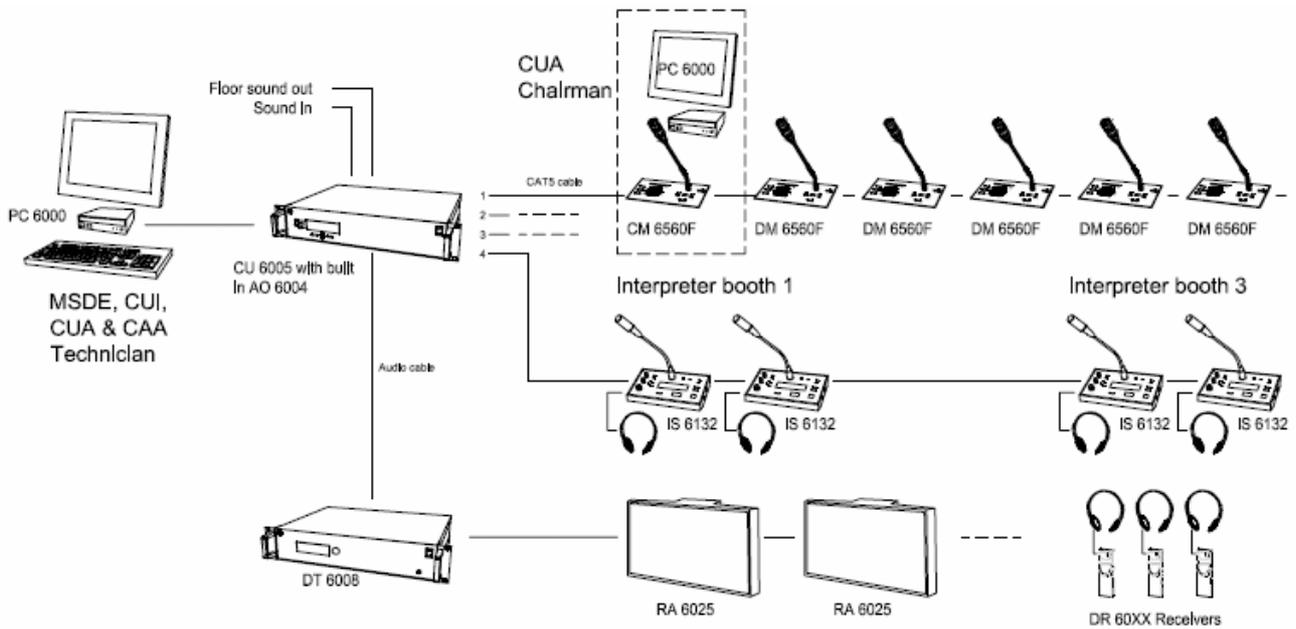
Using AO 6004 with IT 6108 IR-Transmitter

When using the AO 6004 with the IT 6108 Infrared Transmitter, the audio output level on the AO 6004 has to be set to match the sensitivity on the transmitter.

The correct level to be set on each connected channel on the AO 6004 is –12db.

Using AO 6004 with DT 60xx Digital IR-Transmitter

When using the AO 6004 with the DT 60xx Infrared Transmitter, the audio output level on the AO 6004 has to be set to match the sensitivity on the transmitter.

The correct level on each connected channel on the AO 6004 is +3dB. This level is factory preset, but can as earlier mentioned be changed using SW 6000. Please refer to the section 'Pre-configured settings' on page 8. The DT 60XX input level settings should be set to –6dB.

Appendix

Technical appendix

Cabling

CAT5

The DCS 6000 system uses CAT5, CAT5e or CAT6 FTP or STP cables with screened RJ45 connectors.

EIA 568-B wiring shall be used.

It is important to use only FTP or STP (screened) cables and screened RJ45 connectors and not UTP cable, which is unscreened.

How to wire a CAT5 (EIA 568-B) Cable:

Pin	Function	Connector #1	Connector #2
1	In-going +	ORG/WHT	ORG/WHT
2	In-going -	ORG	ORG
3	+48V	GRN/WHT	GRN/WHT
4	0V	BLU	BLU
5	0V	BLU/WHT	BLU/WHT
6	+48V	GRN	GRN
7	Outgoing -	BRN/WHT	BRN/WHT
8	Outgoing +	BRN	BRN

Note.   If other colour codes are used then the four pairs are connected as follows:

Pair 1:   Pin 1 & 2
Pair 2:   Pin 3 & 6
Pair 3:   Pin 4 & 5
Pair 4:   Pin 7 & 8

The phase of the pairs must be correct and the wiring spec. as stated in CAT5 (EIA 568-B) have to be followed.

Note: CAT6 cables can normally only be terminated in sockets (female) and not in cable plugs. CAT6 should thus only be used for long cable draws terminating in wall outlets or patch panels.

Analogue out (XLR3 male)

Pin	Signal	Cable type
1	Ground	DIS type #2914
2	In phase signal	or 2 x 0,25 mm^2
3	Out phase signal	shielded.

Accessories (not supplied)

EC 6000-..5 Connection Cable 0.5 m.......................10 03 12500

EC 6000-01 Connection Cable 1 m.........................10 03 13101

EC 6000-02 Connection Cable 2 m.........................10 03 13201

EC 6000-05 Connection Cable 5 m.........................10 03 13501

EC 6000-10 Connection Cable 10 m.......................10 03 14102

EC 6000-20 Connection Cable 20 m.......................10 03 14202

EC 6000-50 Connection Cable 50 m.......................10 03 14502

Technical specifications

Digital Section

Sound quality .... 20 bit audio @ 32 kHz sampling frequency

Analogue Section

Output signal type............... ground lifting transformer balanced

Nominal output level: ....0 dBm at nominal input

Max. Output level:...15 dBm

Frequency response 50-15kHz

Signal to noise ratio: .... >85 dBA

Total harmonic distortion: ....< 0.1%

General

Power requirement..24-48 V DC

Power consumption .... 2W maximum

Power supplied from

....................................CU 6005 / CU 6010 / EX 6010 / PS 6000

Temperature to guarantee specified performance

..............................5 Deg C. to 40 Deg C. (35 to 80% humidity)

Storage temperature

.... -20 Deg C. to 60 Deg C. (10 to 80% humidity)

Weight .... 0.84 kg

Dimensions (W x H x D).......... 180 (205) x 38 x 120 (120) mm

Dimensions in bracket are including brackets

Accessories supplied .... User manual

Connectors

DCS-LAN network.. 2 pieces RJ45

Analogue outputs connectors .... 4 - XLR3 male connectors

Remote Control commands in/out

By using SW 6000 the user can control the AO 6004 through the CU 6005/6010.

The CU 6005/6010 can read/control the following settings:

* .... Channel number for each output channel

* .... Volume setting for each channel

The settings can only be read/controlled from the SW 6000.

The CU 6005/6010 continuously monitors the status of the AO 6004 to ensure that updated status of the unit is always present on the CU 6005/6010.

Specifications are subject to change without notice.

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